KENTUCKY HERITAGE COUNCIL,
2010-2011 FEDERAL SURVEY AND PLANNING GRANTS

1. APPLICATION INFORMATION			
Organization Name	University of Kentucky Research Foundation for Anthropology Museum		
Organization Address	Office of Sponsored Projects Administration, University of Kentucky, 112 Kinkead Hall, Lexington, KY 40506-0057		
Principal Contact Person	Deborah Davis	Phone	859-257-9240
Contact Person Title	Director	Email	ddavis@email.uky.edu

[ ]	Local Government	[X]	University
[ ]	State Agency	[ ]	Nonprofit Group
[ ]	Regional Planning Agency	[ ]	Other

2. PROJECT INFORMATION			
A.	Category [check appropriate box(es).]	Total Amount Requested	**$ 7,609**
[X]	Survey (Archaeological)	[ ]	CLG Administration
[ ]	Survey (Historic Building)	[ ]	Rural Preservation
[ ]	Context Development	[ ]	National Register Nomination(s)
[ ]	Pre-Development	[ ]	Preservation Planning
[ ]	Technical Assistance	[ ]	Publication
[ ]	Other		

B. Summary: On attachment provide a narrative summarizing the proposed project. Define the research methodology or approach. Define the time frame. Define the products. Define the project impact area and explain how local government and the public will be involved in the project. Archaeological projects also need a research design and must discuss how the project addresses the State Plan in Archaeology, *The Archaeology of Kentucky: Past Accomplishments and Future Directions*, which is available at http://heritage.ky.gov/envreview/archofky.htm (note: updated pdf files for the state plan are at the right side of the webpage).

C. Kentucky Heritage Council program priority: List program priorities from the Kentucky Heritage Council, 2010-2011 Federal Survey and Planning Grants Annual Priorities.

3. PROFSSIONAL QUALIFICATIONS
Attach a resume for the staff, consultant or principal investigator and other key personnel who will carry out the project. If this individual has not been identified, summarize the selection process to be used and the professional standards to be met by consultants. Professionals should meet the criteria established in 36C.F.R.61 and consultants must be selected in accordance with the National Park Service Regulations.

4. BUDGET
Complete the following Budget Summary form for your project.

5. SIGNATURE	
I certify this organization complies with all Federal Fair Employment Laws including Title VI of the Civil Rights Act of 1964, Executive Order 11246 and the Rehabilitation Act of 1973. I certify the information in this application is true and accurate.	
Deborah K. Davis, Associate Director, UKRF	9/23/10 Date

Return electronic files or original and 5 copies of completed application with attachments to:

(By email to:)
Jackie.Bradley@ky.gov
Include in Subject Line: "Federal Survey and Planning Grants

OR

(By Postal Service to:)
THE KENTUCKY HERITAGE COUNCIL
ATTN: Federal Survey and Planning Grants
300 Washington Street
Frankfort, Kentucky 40601

KENTUCKY HERITAGE COUNCIL
2010-2011 FEDERAL SURVEY AND PLANNING GRANT PROPOSAL

1. Contact Information

Chief Administrative Officer
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Principal Investigator
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211 Lafferty Hall
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Museum Financial Officer
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2.B. Project Summary

Title: Survey and Assessment of Archaeological Resources on Flint Island, Meade County, Threatened by River Bank Erosion and Illegal Digging.

Flint Island is an approximate 36 ha (90 ac) island in the Ohio River between River Miles 688.6 and 689.5 near the Meade-Breckinridge county line (Figure 1). The island is privately owned by Jimmy and Anna Popham of Payneville, Kentucky, and is currently used as pasture for cattle. The island is difficult to access by land, which requires a steep descent from the river bluff and crossing the slough that forms Flint Island. It is difficult access even in good weather and nearly inaccessible by vehicle during wet periods or high water on the Ohio River. However, by boat the shoreline is readily accessible and the bank is exposed the entire length of the island due to erosion along the Ohio River. Because of its easy access by boat, archaeological resources that have been exposed by bank erosion are currently under threat by collectors who target sites along the shoreline for digging.

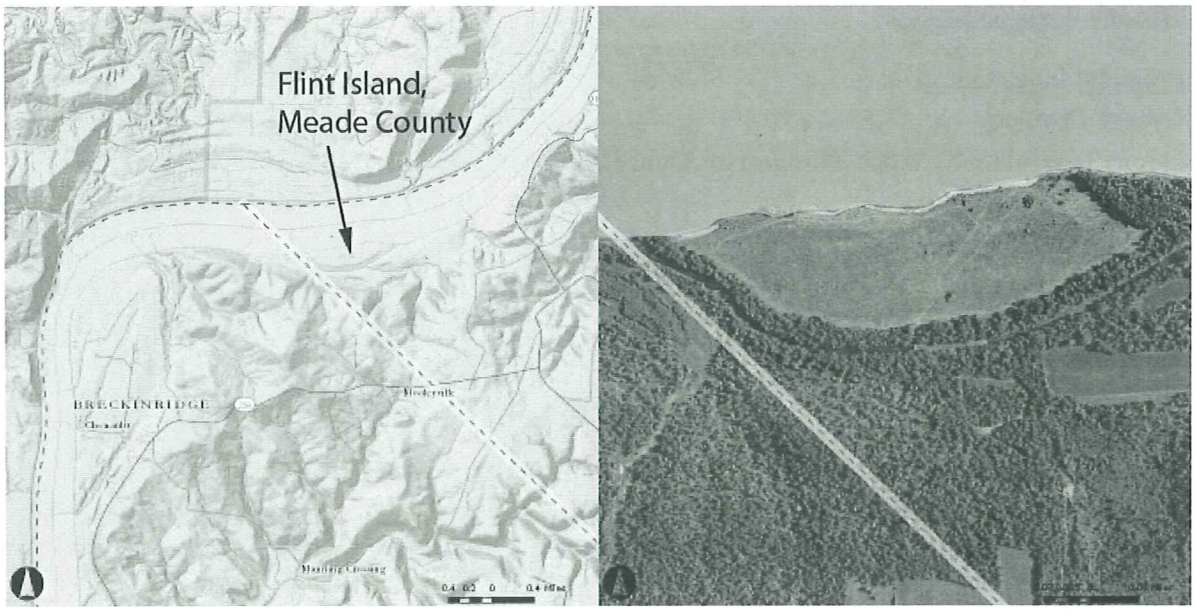

Figure 1. Location of Flint Island, Ohio River, along the Meade-Breckinridge county line. Note the river bank exposure along the north side of the island in the aerial view to the right.

Artifact collectors traveling by boat often target exposed river banks to look for artifacts eroding from the shoreline. This activity in itself is not troublesome; many collectors keep notes on where they collect artifacts and report site locations to the Office of State Archaeology. However, increasingly individuals who are in the collecting business to sell artifacts at trade shows and flea markets have targeted these easily accessible sites because minimal trespassing occurs and the property is difficult to monitor. To increase their artifact yield, these collectors are digging into the bank where deposits appear especially rich and have even used hydrostatic

pumps to wash artifacts from the bank using high pressure water hoses (Fischer 2008). In 2008, looters digging into the bank at Flint Island exposed a prehistoric human burial. The scatter of bones left behind by their activity was reported by the landowner, Mr. Jimmy Popham, to local authorities. An investigation by the Meade County Coroner Bill Adams, State Forensic Anthropologist Emily Craig, University of Louisville archaeologist Phil DiBlasi, and Meade County Archaeological Society member Gerald Fischer confirmed that the remains were human bone from a prehistoric burial that had been desecrated. A police case was opened and remains under investigation (Fischer 2008).

The landowners, assisted by members of the Meade County Archaeological Society and Falls of the Ohio Archaeological Society, have been monitoring the island for illegal activity, but its inaccessibility makes the job difficult. In addition, members of the Meade County Archaeological Society under the direction of Gerald Fischer have also begun a more systematic survey of the island to document its entire archaeological record. The work proposed here is a continuation of the work begun by the Meade County Archaeological Society and in conjunction with them to document the island's prehistoric and historic archaeological resources. The information collected during the proposed survey and testing project will be the basis for designing a long-term monitoring and preservation plan and for proposing future research questions that can be addressed through additional investigations.

A survey of the island will be made using systematic shovel tests and surface survey with deep auger test transects to determine the depth of surface deposits and any potential buried deposits. River bank exposures will be examined to document eroding artifacts and evidence of buried deposits. Systematic shovel tests running from exposed bank deposits will be used to determine site boundaries. This will be followed by deep auger test transects across defined sites to determine the depth and nature of buried deposits -- midden accumulations, shell lenses, and potentially other features. Controlled excavations are not planned at this stage of investigation, unless human remains, hearths, or other features are exposed in the river bank and threatened by immediate destruction from erosion or looting. In this case, the remains will be documented *in situ* and stabilized if possible or samples collected for further analysis. Using available volunteer labor the remainder of the island will be systematically surveyed or shovel tested with selective deep coring to identify other archaeological deposits not immediately exposed in the eroded river bank. Further details of the testing program are described below.

Figure 2. View of riverbank on Flint Island. Photo courtesy of Anne Bader, Falls of the Ohio Archaeological Society.

Figure 3. Fire-cracked rock and lithic debitage eroding from the face of the river bank on Flint Island. Photo courtesy of Anne Bader, Falls of the Ohio Archaeological Society.

Previous Archaeological Investigations and Historical Information

According to the Office of State Archaeology site records, one prehistoric archaeological site was previously recorded on Flint Island. Site 15Md215 was recorded by Joseph Granger and others from the University of Louisville Archaeological Survey in 1977. The "village site" was identified based on material eroding from the river bank and midden deposits exposed in the bank profile. The site is described as being located on the north side of Flint Island near the upriver end at RM 688.7. No systematic testing was done in 1977 beyond the exposed river bank to determine the extent of the site boundaries. Current Office of State Archaeology records have the site located on the up-stream end of Flint Island, but the boundaries are only approximations.

Granger describes the site as:

> Village site ? eroding from bank were Harrison Co. chert debitage, charcoal, fire cracked rock, pottery, majority flint tempered, incised, cord-marked and punctated, one Mississippian ? triangle pt. Midden zone 3.5' thick?, extends the length of the eroded bank. .6' below the top of bank.

He describes the cultural affiliation as "Early Woodland, Late Prehistoric?" This seems consistent with the description of the pottery and potential Mississippian triangular point. The 3.5 ft thick midden deposit beginning approximately one half foot below the surface is particularly interesting. Site 15Md215 may be a multi-component, deeply stratified deposit. Unfortunately, we do not have any information on the extent of the deposit, and can only speculate on how much of the deposit has been lost since first recorded in 1977.

Discussions with Anne Bader of the Falls of the Ohio Archaeological Society and Gerald Fischer of the Meade County Archaeological Society indicate that archaeological material is also evident on the extreme downstream end of the island. This site has not been well defined. Archaeological material collected from previous work and more current work by the Meade County Archaeological Society seems to confirm a preponderance of Early Woodland and Late Prehistoric or Mississippian material on Flint Island. Given the island's location in the Ohio River, one might expect to find a substantial range of artifacts spanning the Holocene. Early Holocene deposits could be deeply buried by alluviation from the Ohio River.

Although no historic archaeological resources have been identified on Flint Island, it appears to have been settled by the early 1800s. William Elder (1757-1822) together with his wife and children came to Kentucky in 1791 and settled near his brother James Elder on Hardin's Creek in Breckinridge County. In 1804, William Elder moved his family to Flint Island "where he passed the remainder of his life, and reared a large and interesting family of children" (Webb 1884:128). The home of William Elder became a church station for surrounding Catholic families as early as 1810. This church station was given the name of St. Theresa's, and in 1818 the presiding priest,

Father Abell, was presented with 300 acres of land for a church. (This gift of land exceeds the size of Flint Island, so presumably it included Flint Island and other surrounding property.) In 1826 the congregation erected a small log church on Flint Island that was replaced sometime after 1850. The 1850s church on Flint Island was still in use in 1884 at the time Benedict Joseph Webb published *The Centenary of Catholicity in Kentucky* (Webb 1884:420).

St. Theresa Parish is still an active parish of the Roman Catholic Archdiocese of Louisville, Kentucky. The church is now located in Rhodelia, Kentucky, a short distance from Flint Island. Parish records may contain additional details on the early church station organized by William Elder and history of the church on Flint Island. Although Gerald Fischer indicated that the church grounds may be lost to bank erosion, a portion of the fieldwork will attempt to identify any remains of the former church, associated cemetery, and early homestead of William Elder.

Research Design and Logistics

The proposed research is basically a Phase I survey of the island. In addition to usual methods of site identification--surface survey and shovel testing--we will use the exposed river bank profiles as the beginning point. Archaeological material eroding from the bank will be noted and then a grid of shovel test units imposed over areas adjacent to the river bank to define site boundaries. Because we expect deposits to exceed the depth normally reached by shovel testing (ca. 50 cm), a 4-in bucket auger with extensions will be used to define the maximum depth of archaeological deposits and describe the sedimentary structure. Bucket augers are particularly useful for testing deep deposits and have minimal impact to the site (as opposed to backhoe trenches). The Webb Museum has a set of hand operated sediment augers and extensions with various Dutch and Riverside bucket auger heads for use in clayey, sandy, stoney, or wet sediments.

After defining all archaeological deposits identified by river bank exposure, remaining portions of the island will be surveyed using standard surface survey methods where surface exposure is adequate or systematic shovel test transects where ground cover is prohibitive. Grid spacing will be determined in the field based on the remaining area to survey. If subsurface archaeological remains are recovered, then the grid interval will be shortened to further delineate site boundaries. Sediment from all shovel tests will be screened through standard 1/4-in hardware cloth to recover artifacts for laboratory analysis. Systematic auger tests will also be used to sample for deeper deposits. Sediment samples may be retained from auger tests if buried archaeological deposits are encountered. These samples will allow radiometric dating of archaeological deposits in future analyses where diagnostic artifacts are not recovered. Contour maps of all identified sites will be made using a Total Station showing test locations and any surface distribution of artifacts. Semi-permanent datums (iron rebar driven at least 18-in into the ground and flush with the surface) with corresponding Global Positioning System coordinates will be placed near site locations as control points to monitor future bank erosion.

Although not specifically planned at this phase, if the field situation warrants their use, other recovery or data collection methods may be used to document archaeological deposits. For example, a small test unit to document an eroding archaeological feature or possibly near-surface geophysical methods (ground penetrating radar, magnetometry) may be used to identify potential architectural remains or other archaeological features, if deemed appropriate.

Two weeks are planned for the fieldwork portion of the proposed project. The field crew will consist of the Principal Investigator, George Crothers, the Project Director, Rick Burdin, one staff field assistant, to be determined, and volunteers from the Meade County Archaeological Society, the Falls of the Ohio Archaeological Society, and student volunteers from the University of Kentucky and other area schools. Crothers and Burdin have extensive archaeological experience in the Ohio Valley region (résumés attached). A graduate student or post-baccalaureate student from the University of Kentucky will be hired as a field assistant to help with logistics and volunteer supervision in the field and laboratory. Avocational archaeologists from the Meade County Archaeological Society and Falls of the Ohio Archaeological Society will be essential to the completion of this project both in the field and with processing recovered artifacts. Gerald Fischer and Ann Bader both have experience, knowledge of Flint Island, and good relations with the landowners that will be indispensible. Fischer and Bader will help coordinate volunteers from the Meade County and Falls of the Ohio archaeological societies, respectively.

The field crew is planning to tent camp either on Flint Island if permission is granted by the landowners, or at a nearby campground. Volunteers will be welcome to camp, or may commute daily if they live in the area. Food will be provided for the field crew and lunch meals for the volunteers. Because of the difficult access to the island by land, a four-wheel drive truck will be used for commuting.

Initial laboratory processing and cataloging will take place in the field or facilities available to the Meade County Archaeological Society. Final processing, any specialized analyses, and final report preparation will take place at the William S. Webb Museum of Anthropology, University of Kentucky. Notes, maps, photographs, and other records will be curated at the Webb Museum. Donation of artifacts recovered during the project will be sought from the landowners, but they retain the right to keep any artifacts recovered from their property after analysis and report writing is completed. Donated artifacts will also be permanently curated at the Webb Museum.

We will also work with the Meade County Archaeological Society to create an exhibit on Flint Island archaeology that can be displayed in a suitable local venue. The Principal Investigator and Project Director will also give talks to the local archaeological societies summarizing the findings and for the benefit of members who were unable to participate in the project and other interested residents of the area.

In addition to completing new site forms and updating site 15Md215, a final technical report will be prepared for the Kentucky Heritage Council and placed on file with the Office of State Archaeology. It is also expected that results of the survey will be presented at the annual Kentucky Heritage Council Archaeological Conference, other regional or national archaeological meetings, and adapted for publication in a suitable academic journal such as the *Midcontinental Journal of Archaeology* or *Southeastern Archaeology.*

Significance of the Research

Because Flint Island has not been systematically surveyed, the archeological resources are incompletely known. Archaeological resources are threatened by erosion from the Cannelton Pool of the Ohio River and exacerbated by looting along the exposed shoreline. A baseline survey will provide information on extant resources, their current threat level, and provide information for devising a preservation plan or potential data recovery of the threatened resources.

Flint Island has the potential to contain stratified deposits dating from Paleoindian to Mississippian prehistoric periods and remains from the Early Settlement to Postbellum historic periods as defined for Kentucky (Pollack 2008). Previous research indicates that Early Woodland and Mississippian deposits are present. Because of its situation in the Ohio River floodplain it has the potential for deeply buried deposits.

Flint Island is located in the Salt River Management Area and very near the Ohio River II Section of the Green River Management Area of the statewide archaeological plan (Pollack 2008). This survey will address several state-wide objectives including more problem-oriented surveys, investigation of alluviated areas, and updating and improving the Archaeological Site Geographic Information System (Pollack 2008:24-25). For the Salt River Management Area, the number of sites documented by major surveys has dropped substantially since 1987. Relatively few archeological sites (n=10) in the management area have been listed on the National Register of Historic Places, and less than three percent of the area has been systematically surveyed (Stackelbeck and Mink 2008:58).

The Principal Investigator and Project Director have an active research program focusing on Archaic Period hunter-gatherer populations and the transition to Early Woodland horticultural societies in the greater Ohio River Valley region. Extensive problem oriented research has been done on archaeological remains in the Green River Management Area (e.g., Crothers 1999, 2008; Marquardt and Watson 2005), but relatively little research has been done on the Ohio River drainage proper. Recent dissertation research by Rick Burdin is beginning to remedying this deficiency. Working on stratified Archaic sites on the Indiana side of the Ohio River just upstream from Flint Island, Burdin is analyzing material from shell midden and non-shell midden sites comparable to the Green River material. Flint Island has the potential to broaden our understanding of Archaic and Woodland period

systematics in the Ohio River Valley. Based on the results of the survey, future research, for example, could target Late Archaic and Early Woodland deposits to recover new data on settlement and early plant cultivation critical to understanding the reorganization of social and economic institutions occurring at the Archaic/Woodland period transition. Research on Flint Island also has the potential to draw in new students with potential topics for Master's theses and dissertation research.

References Cited

Crothers, George M.

1999 Prehistoric Hunters and Gatherers, and the Archaic Period Green River Shell Middens of Western Kentucky. Unpublished Ph.D. dissertation. Department of Anthropology, Washington University, St. Louis.

2008 From Foraging to Farming: The Emergence of Exclusive Property Rights in Kentucky Prehistory. In *Economies and the Transformation of Landscape*, edited by Lisa Cliggett and Christopher A. Pool, pp. 127-148. AltaMira Press, Lanham, Maryland.

Fischer, Gerald W.

2008 The Incredible Shrinking Flint Island. *The Meade County Messenger* 30 July. Accessed online Sept. 13, 2010, http://www.meadecountymessenger.com/z_2008-07-30/local/story_4.asp.

Marquardt, William and Patty Jo Watson (editors)

2005 *Archaeology of the Middle Green River Region, Kentucky.* University Press of Florida, Gainseville.

Pollack, David

2008 Introduction. In *The Archaeology of Kentucky: An Update*, edited by David Pollack, pp. 1-26. State Historic Preservation Comprehensive Plan Report No. 3. Kentucky Heritage Council, Frankfort.

Stackelbeck, Kary and Philip B. Mink

2008 Overview of Prehistoric Archaeological Research in Kentucky. In *The Archaeology of Kentucky: An Update*, edited by David Pollack, pp. 27-108. State Historic Preservation Comprehensive Plan Report No. 3. Kentucky Heritage Council, Frankfort.

Webb, Joseph, Ben.

1884 *The Centenary of Catholicity in Kentucky*. Charles A. Rogers, Louisville.

2.C. Program Priorities

The proposed survey of Flint Island addresses several Kentucky Heritage Council program priorities under Archaeological Resources, Native American Heritage, and National Register including:

- Surveys of areas threatened by physical impact.
- Projects that develop local management or preservation plans.
- Projects that actively involve the public.
- Projects that further the historic preservation and education goals of the Kentucky Native American Heritage Commission.
- Testing of archaeological sites to determine eligibility and to prepare nomination forms.

As previously described, archaeological deposits on Flint Island are threatened by bank erosion from combined effects of natural river bank erosion, pool fluctuation caused by Cannelton Lock and Dam, and barge traffic and other boat traffic on the Ohio River that increases wave action. The exposure of archaeological material along the river bank has in turn attracted artifact collectors to scourer the bank for artifacts and induced some to dig into the deposits seeking additional artifacts. In at least one instance, human bones were recently dug from the bank in an effort to recover artifacts. Digging along the river bank accelerates the rate of erosion creating a positive feed-back loop between bank erosion and illegal digging, which induces further bank erosion and additional looting.

The proposed project will establish a baseline of information on extant archaeological resources on Flint Island from which adverse impacts (both natural and human made) can be monitored and a preservation plan developed to stabilize bank deposits or mitigate loss of resources with controlled excavations.

Fieldwork and laboratory processing of material recovered during the survey primarily will be accomplished using volunteer labor from the Meade County Archaeological Society, the Falls of the Ohio Archaeological Society, and students from the University of Kentucky, University of Louisville, and other area universities or schools. The project will provide an opportunity for professional archaeologists, students, avocational archaeologists, and members of the interested public to interact. Students and avocational archaeologists will benefit by working with professional archaeologists on current methods of site recording and testing, and professional archaeologists will benefit by learning about needs and interest of the avocational community, current threats to other archaeological resources in the area, and building land-owner relations.

Closely related to the program priorities under Archaeological Resources, the project will further the goals of the Native American Heritage Commission by documenting threatened resources and developing preservation plans for the protection of American Indian burial sites on Flint Island. In consultation with the Native American Heritage Commission and Tribal Historic

Preservation Offices, one goal of the project will be to educate local law enforcement to the significant illegal activities caused by looting including trespassing and property destruction, burial desecration, and potential federal violations under the Archaeological Resources Protection Act and the Clean Water Act.

Finally, the results of the project will allow an assessment on whether Flint Island or individual archaeological sites on the island should be considered eligible for nomination to the National Register of Historic Places. The field methods are designed to provide age, depth, integrity, and kinds of archaeological deposits found on Flint Island. This information will allow an assessment on the potential significance of these resources. In consultation with the State Historic Preservation Office, a plan will then be implemented for preparing nomination forms where appropriate.

3. Résumés of Key Personnel

(Attached)

George M. Crothers
Principal Investigator

Sheldon R. Burdin
Project Director

GEORGE MARTIN CROTHERS

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E-mail	george.crothers@uky.edu

CURRENT POSITION

Director, William S. Webb Museum of Anthropology and Office of State Archaeology
Associate Professor, Department of Anthropology
University of Kentucky, Lexington

RESEARCH INTERESTS

North American prehistory, eastern U.S. archaeology, institutional economics, hunters and gatherers, origins of agriculture, cave archaeology

EDUCATION

Washington University, St. Louis	Anthropology	B.A. 1981
University of Tennessee, Knoxville	Anthropology	M.A. 1987
Washington University, St. Louis	Anthropology	Ph.D. 1999

AWARDS, GRANTS, AND HONORS

Major Research Instrumentation Grant, National Science Foundation, 2009-2012
Board of Directors, Cave Research Foundation, 2007-present
Major Research Instrumentation Grant, National Science Foundation, 2006-2007
Supporting Life Long Learning, Institute of Museum and Library Services Grant, 2004-2008
Governor's Board of Directors, Kentucky Natural History Museum, 2004-2008
Board of Directors, Kentucky Organization of Professional Archaeologists, 2003-2006.
Visiting Scholar, Southern Illinois University, Carbondale, 2000-2001
Earthwatch Center for Field Research grant, Mammoth Cave National Park, 1994-2004
Research grant, Kentucky Heritage Council, 1990
Research grant, National Speleological Society, 1989
Research grant, Tennessee Department of Conservation, 1984

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Cave Research Foundation
Kentucky Academy of Science
Kentucky Organization of Professional Archaeologists
National Speleological Society
Sigma Xi
Society for American Archaeology
Southeastern Archaeological Conference

CURRENT FIELD AND RESEARCH PROJECTS

Co-Principal Investigator (with Steve Ahler), Archaeological and Paleontological Investigations along Selected Trail Segments within Mammoth Cave and Great Onyx Cave, Mammoth Cave National Park, Kentucky. 2007-present

Co-Principal Investigator (with C. Swedlund), *To Draw on Stone: Documentation of the Historic and Prehistoric Drawings in Caves of the Mammoth Cave Area.* 2003-present.

Co-Principal Investigator (with D. Morey, J. Stein, and P.J. Watson), Shell Midden Archaeological Project, Kentucky, 1999-present.

SELECTED PUBLICATIONS

Books

Crothers, G.M. Editor. 2004. *Hunters and Gatherers in Theory and Archaeology*. Occasional Paper No. 31, Center for Archaeological Investigations. Southern Illinois University, Carbondale.

Journal Articles and Book Chapters

Crothers, G.M. 2008. The Emergence of Exclusive Property Rights in Kentucky Prehistory. In *Economics and the Transformation of Landscape*, edited by Lisa Cliggett and Christopher Pool, pp. 127-147. Society for Economic Anthropology monographs, vol. 25. Altamira Press, Lanham, MD.

Crothers, G.M., P. Willey, and P.J. Watson. 2007. Cave Archaeology and the NSS: 1941-2006. *Journal of Cave and Karst Studies* 69:27-34. Invited paper for the 65th Anniversary Issue.

Crothers, G.M. 2005. Vertebrate Fauna from the Carlston Annis Site. In *Archaeology of the Middle Green River Region*, edited by William H. Marquardt and Patty Jo Watson, pp. 295-314. Monograph 5, Institute of Archaeology and Paleoenvironmental Studies, Florida Museum of Natural History, University of Florida, Gainesville.

Crothers, G.M., and R. Bernbeck. 2004. The Foraging Mode of Production: The Case of the Green River Archaic Shell Middens. In *Hunters and Gatherers in Theory and Archaeology*, edited by G. M. Crothers, pp. 401-422. Occasional Paper No. 31, Center for Archaeological Investigations. Southern Illinois University, Carbondale.

Crothers, G.M. 2004. The Green River in Comparison to the Lower Mississippi Valley during the Archaic: To Build Mounds or Not to Build Mounds. In *Big Mounds, Big Power: the Rise of Cultural Complexity in the Southeast,* edited by J. Gibson and P. Carr, pp. 86-96. University of Alabama Press, Tuscaloosa.

Morey, D.F., G.M. Crothers, J.K. Stein, J.P. Fenton, and N.P. Herrmann. 2002. The Fluvial and Geomorphic Context of Indian Knoll, An Archaic Shell Midden in West Central Kentucky. *Geoarchaeology: An International Journal* 17:521-551.

Crothers, G.M., C.H. Faulkner, J. Simek, P.J. Watson, & P. Willey. 2002. Woodland Cave Archaeology in Eastern North America. In *The Woodland Southeast,* edited by D.G. Anderson and R.C. Mainfort, Jr., pp. 504-525. University of Alabama Press, Tuscaloosa.

Crothers, G.M. 2001. Mineral Mining and Perishable Remains in Mammoth Cave, Kentucky: Examining Social Process During the Early Woodland Period. In *Fleeting Identities: Perishable Material Culture in Archaeological Research,* edited by P.B. Drooker, pp 314-334. Occasional Paper No. 28, Center for Archaeological Investigations. Southern Illinois University, Carbondale. .

Morey, D.F. and G.M. Crothers. 1998. Clearing Up Clouded Waters: Paleoenvironmental Analysis of Freshwater Mussel Assemblages from the Green River Shell Middens, Western Kentucky. *Journal of Archaeological Science* 25: 907-26.

Cannon, K.P., K.L. Pierce, and G.M. Crothers. 1995. Caldera Unrest, Lake Levels, and Archeology: The View from Yellowstone Lake. *Park Science* 15(3): 28-31.

Crothers, G.M., and P.J. Watson. 1993. Archaeological Contexts in Deep Cave Sites: Examples from the Eastern Woodlands of North America. In *Formation Processes in Archaeological Context*, edited by P. Goldberg, D.T. Nash, and M.D. Petraglia, pp. 53-60. Prehistory Press, Madison, Wisconsin.

Crothers, G.M. 1992. Archaeology in Caves. In *Caving Basics: A Comprehensive Guide for Beginning Cavers*, 3rd ed., edited by G.T. Rea, pp. 150-158. National Speleological Society, Huntsville, Alabama.

Willey, P., G.M. Crothers, and C.H. Faulkner. 1988. Aboriginal Skeletons and Petroglyphs in Officer Cave, Tennessee. *Tennessee Anthropologist* 13: 51-75.

Crothers, G.M. 1983. Archaeological Investigations in Sand Cave, Kentucky. *National Speleological Society Bulletin* 45: 19-33.

CURRICULUM VITA
(Short Version)

Sheldon R. Burdin
232 Albany Road Lexington, Kentucky 40503
Cell: (859) 321-5376; E-mail: srburd2@uky.edu

CURRENT POSITION: Staff Archaeologist, Kentucky Archaeology Survey, Department of Anthropology, University of Kentucky

EDUCATION

University of Kentucky

Current - PhD. Candidate (ABD), Department of Anthropology
2004 - M.A. , Anthropology, Department of Anthropology

GRANTS AND AWARDS

Historic Preservation Grant, Indiana DNR-DHPA: 2007 ($68,587)
Recipient, Historic Preservation Grant, Indiana DNR-DHPA: 2001 ($7,065).
Recipient Indiana University Undergraduate Research Fellowship (RUGS): 1998 ($2,000).
Recipient Indiana University Southeast Undergraduate Research Fellowship: 1997 ($1,000).

ARCHAEOLOGICAL FIELD EXPERIENCE

2009: Project Director, Survey and Limited Excavations in Selected Lowlands of the New River Gorge National River in Summers and Raleigh Counties, West Virginia. Kentucky Archaeology Survey, University of Kentucky.

2008: Project Director, Archaeological Survey of a 140 Acre Tract for the Proposed Location of the New McCracken County Consolidated High School. Kentucky Archaeology Survey, University of Kentucky.

2008-Present: Project Director, Archaeological Site Assessment for the New River National River, West Virginia. Kentucky Archaeology Survey, University of Kentucky.

2008: Project Director, Archaeological Reconnaissance and Survey of Chestnut Mountain, New River National River, West Virginia. Kentucky Archaeology Survey, University of Kentucky.

2007–2008: Project Director, Archaeological Investigations of the Overflow Pond (12Hr12) and Breeden (12Hr11) Sites and Survey of the Surrounding Floodplain in Harrison County, Indiana. Department of Anthropology, University of Kentucky.

2006: Staff Archaeologist, Program for Archaeological Research, University of Kentucky; Phase II Archaeological Investigations of the Woodlawn Site in Richmond, Kentucky.

2005-2006: Staff Archaeologist, Kentucky Archaeology Survey.

2004: Staff Archaeologist, Kentucky Archaeology Survey, Emergency Excavations at 15Bo6, Petersburg, Kentucky.

2004: Project Director, Archaeological Excavations of Sites 15Jo74 and 15Jo75, Johnson County, Kentucky. Kentucky Archaeology Survey, University of Kentucky.

2003-2004: Volunteer Work at Mammoth and Indian Salts Caves, Kentucky and at the Meyer Site in Spencer County Indiana.

2003: Project Director, Archaeological Reconnaissance and Survey of the New River National River, West Virginia. William S. Webb Museum of Anthropology, University of Kentucky.

2003: Project Director, Archaeological Reconnaissance and Survey of the Gauley National Recreation Area, West Virginia. William S. Webb Museum of Anthropology, University of Kentucky.

2001 through 2002: Project Coordinator, Survey and Assessment of site 12Fl-73, an Eroding Site along the Ohio River in Floyd County, Indiana. Department of Anthropology, University of Kentucky.

PAPERS, PUBLICATIONS AND PROFESSIONAL PRESENTATIONS (RE: GROUNDSTONE)

2009 Preliminary Results of the 2007 Investigations of Two Late Middle to Late Archaic (ca. 6,000-3,000 B.P.) Sites in Harrison County, Indiana: The Breeden (12Hr11) and Overflow Pond (12Hr12) Sites. Article written for the Indiana Online Archaeology Journal. Division of Historic Preservation and Archaeology, Indianapolis.

2009 Groundstone Section in Archaeological Investigations of the Early and Late Fort Ancient Howard Site (15ma427), Madison County, Kentucky. Kentucky Archaeology Survey Report No. 151. Lexington.

2008 Archaeological Investigations of the Overflow Pond Area in Harrison County, Indiana: The 2007 Survey and Excavations at the Breeden (12Hr11) and Overflow Pond (12Hr12) Sites. University of Kentucky, Department of Anthropology.

2006 Middle and Late Archaic Bannerstones from the Lower Ohio River Valley: Distributions, Raw Materials, and Color Patterns. Paper presented at the Midwest Archaeological Conference, Toledo, Ohio.

2006 Middle and Late Archaic Bannerstones. Paper presented at the Kentucky Historic Preservation Conference, Covington, Kentucky.

2005 Archaic Bannerstones: Raw Material and Color Choices Among Hunting and Gathering Groups in the Lower Ohio River Valley (ca. 6500 to 3000 BP). Paper presented at the Midwest Archaeological Conference, October 2005. Dayton, Ohio.

2004 M.A. Thesis - Interaction, Exchange, and Politics Among Hunter-Gatherers in the Midcontinent of North America – Evidence from the Lower Ohio River Valley: Bannerstone Use from 6500-3000 B.P. University of Kentucky, Department of Anthropology.

2004 Interaction Between Hunter-Gatherer Groups in the American Midcontinent-Bannerstones from late Middle-to-Late Archaic Contexts 4500-1000 B.C. Presented at the Kentucky Heritage Council Conference, Cumberland Falls State Park, Kentucky.

2002 Bannerstone Distribution and Social Interaction among Middle and Late Archaic Groups (ca. 4500 – 7500 BP) in the Midcontinent of North America. Presented at the Kentucky Heritage Council Conference, Frankfort, Kentucky, May, 2002.

PUBLICATIONS AND PAPERS WITH OTHERS (RE: GROUNDSTONE)

Jefferies, Richard and Rick Burdin

2007 Holocene Hunter-Gatherer Interaction In the North American Midcontinent. Paper Presented at the Society of American Archaeology, Austin, Texas.

Henderson, A. Gwynn and S. Rick Burdin

2006 Hunters and Gatherers of the Green River Valley. Kentucky Archaeology Survey Education Series Number Seven. Lexington, Kentucky.

4. Budget Summary

(Budget Summary Form Attached)

The Federal share of the budget is based on salary for the Project Director and one field assistant, perdiem to cover food for the crew and volunteers, rental of a four-wheel drive vehicle from the university motor pool, and miscellaneous costs associated with printing, photography, and expendable supplies. The non-Federal match is based on the Principal Investigators salary, volunteer time, and university indirect costs.

KENTUCKY HERITAGE COUNCIL,
2010-2011 FEDERAL SURVEY AND PLANNING GRANTS

APPLICANT:	University of Kentucky Research Foundation for Anthropology Museum
TOTAL GRANT AMOUNT REQUESTED:	**$ 7609**

A. EXPENDITURES

Federal share cannot exceed 60% of total cost of expenditure. Non-federal share must be at least 40% or more of the total cost of expenditure. In-kind, non-federal share can be used as part of the 40% match but is not reimbursable.

TYPE OF EXPENDITURE	I. TOTAL COST OF EXPENDITURE	II. FEDERAL SHARE	NON-FEDERAL SHARE	
A. PERSONNEL			**III. CASH**	**IV. IN-KIND**
Staff Salary	12,124	5,280	6,844	0
Staff Fringe	2,687	457	2,230	0
Consultant Fees	0	0	0	0
Volunteer Service	1,280	0	0	1,280
B. OPERATING EXPENSES				
Rent	0	0	0	0
Utilities/Telephone	0	0	0	0
Printing/Copying	150	150	0	0
Photography	100	100	0	0
Computer Services	0	0	0	0
Travel	1,522	1,522	0	0
Expendable Supplies	100	100	0	0
Postage	0	0	0	0
Professional Development	0	0	0	0
Equipment	0	0	0	0
Indirect Costs (Only universities)	8,091	0	0	8,091
C. OTHER (list)				
D. TOTAL ALL COLUMNS	$26,054	$7,609	*$9,074	*$9,371

B. SOURCE OF NON-FEDERAL SHARE (Columns III & IV above)

Provide organization source of all cash and in-kind contributions to the non-federal share. List in-kind and cash contributions from the same organization separately. In-kind contributions from the community donated through the sponsor may be totaled and listed as one item.

AGENCY/ORGANIZATION	SOURCE OF MATCH (e.g. General Funds)	CASH	IN-KIND	TOTAL
University of Kentucky	General Funds 1012003850	9,074	0	9,074
University of Kentucky	Indirect Costs	0	8,091	8,091
Individual Volunteers	Individuals	0	1,280	1,280
TOTAL ALL COLUMNS		$9,074	$9,371	*$18,445

***Totals for Columns III and IV of Part A must equal total in Part B.**

5. Civil Rights Compliance

(Civil Rights Compliance Grid Attached)

The University of Kentucky is and Equal Opportunity University committed to a policy of providing opportunities to people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, marital status, age, veteran status, or physical or mental disability. Additional information on the universities EO policies and regulations can be found on the Office of Institutional Equity and Equal Opportunity web site (http://www.uky.edu/EVPFA/EEO/).

The Civil Rights Compliance Grid reflects the identities of the grant planning group (Principal Investigator and Project Director) and the staff of the Webb Museum and Office of Sponsored Projects Administration. Volunteer and student workers will be used during the project, but their identity is not known at this time. Volunteer forms will be completed by each volunteer in which they can self identify their race or other identifying information. This information will be compiled and filed with the final project report.

We will inform the Native American Heritage Commission and Tribal Historic Preservation Offices with an interest in Kentucky of our intended work and encourage collaboration and volunteer opportunities for any groups they identify who may have an interest in the project.

The identified population group information used in the grid is for Meade County, Kentucky, 2000 Federal census data.

CIVIL RIGHTS COMPLIANCE GRID

The Kentucky Heritage Council observes the provisions of the Civil Rights Act of 1964, and all subsequent federal and state laws and regulations. The Heritage Council must ensure that its subgrantees do the same. If your county or area contains, for instance, a significant number of Hispanics or African Americans, then your group must find ways to involve these populations in the grant project. The grid below offers the subgrantee a way to demonstrate to the Kentucky Heritage Council that diverse populations have been considered in the planning of the grant project, in its execution, and in its products.

Please enter a number into each cell below, as applicable. ***The numbers entered will show how many people participate in the project according to their role (the horizontal rows) and according to their population status (the vertical columns).** Use the grid to track the participation of diverse groups in your project.

In a county with a significant number of Hispanics and African Americans, members of those groups can participate in the project planning by being on the team that designs the project. In that same county, they can be involved in the project's execution by participating as volunteer researchers, as informant, as the project's staff members, and the project's advisory group, or as the consultant hired to complete the project. Also, if the project's products are intended for target audiences, such as programs for children in schools with large minority populations, or in documents that focus on the lives of those residents, then indicate on the grid, the numbers of people served by those products.

		Identified Population Group									
		African American, Black	Asian American or Pacific Islander	Hispanic	Native American, Eskimo or Aleut	White	Other Races	Women	Older American	Persons With Disabilities	TOTALS
Role of Participants or Grant Project's Audience	Grant Planning Group					2					
	Consultant Or Staff	1				3		3	1		
	Advisory Group, if Applicable										
	Volunteer Workers, if Applicable										
	Student Population, if applicable										
	Product's Intended Audience										
	Other Activity										
	Other Activity										
	Total in County or Area Served*	1088 4.1%	172 0.7%	567	156 0.6%	24339 92.4%	594 2.3%	50.4%	10.4%	4679 17.8%	26349 100.1%

*These figures can be derived from the latest census reports for the county or area served and can be obtained by going to http://quickfacts.census.gov/qfd/states/21000.html.